REMARKS

Claims 9-11 are pending in the application.

I. Objection of claim 11

The Examiner objected to claim 11 as being dependent upon a rejected base claim and indicated that if rewritten in independent form would be allowable. Applicant notes, however, that claim 11 was rewritten in independent form in an Amendment filed with the Appeal Brief filed on August 14, 2006. Therefore, Applicant respectfully requests the Examiner to withdraw this objection and enter the amendment as previously submitted. Claim 11 is believed to be allowable.

II. Rejection under 35 U.S.C. § 103(a)

Claims 9-10 are rejected under 35 U.S.C. § 103 as being unpatentable over Pavlovic et al (U.S. 6,591,146) in view of Aggarwal et al (IEEE, Human Motion Analysis). Applicant traverses this rejection.

A. Claim 9

Claim 9 recites, inter alia, "determining a state, to which each frame belongs, using the obtained feature vectors", which the Examiner asserts is taught by column 22, lines 13-41, of Pavlovic. Equation 18 of Pavlovic, however, merely defines a vector of pixel differences, Zt, formed by subtracting pixels in a template model T from a region of pixels in an input video frame It under the action of the figure state (Col. 22, lines 25-28). In other words, the figure vector Zt, as asserted by the Examiner, is defined by the figure state. Additionally, Pavlovic

teaches that a state prediction module 500 takes as input the state estimate from the previous time instant and the predicted state is output from the state prediction module (Col. 21, lines 26-29). The measurement processing module 501 takes the predicted state, generates a corresponding predicted measurement, and combines it with an actual measurement to form the vector Zt (Col. 21, lines 29-33). Therefore, Pavlovic teaches the feature vector Zt being formed from the predicted state, which is inherently the opposite of what is claimed in claim 9. Therefore, Pavlovic does not teach or suggest determining a state using the obtained feature vectors, as required by claim 9.

Furthermore, the Examiner admits that Pavlovic does not specifically disclose a model, which maximizes the probability between activity models and video frame provided from a given activity model dictionary, as recited in claim 9. As a result, the Examiner cites Aggarwal to make up for this deficiency. In particular, the Examiner states that section 4.2 "State-Space Approaches" of Aggarwal teaches human motion analysis comprising Hidden Markov Model including maximizing the probability between activity models and video from provided from a given activity model dictionary (the parallel network).

Aggarwal cites to Campbell to teach that gesture recognition is based on the maximum value of the correlation between predictor and the current motion. The maximum value of the correlation between predictor and the current motion, however, merely teaches using a relationship or model to predict an order sequence using a maximum value. There is no teaching or suggestion of determining an activity model which maximizes the probability between activity models and a video frame provided from a given activity model dictionary using a transition

matrix for the determined state, as the recognized activity. Also, Aggarwal does not teach or suggest determining an activity model as a recognized activity.

Further, the Examiner seems to assert that the activity model dictionary of claim 9 is taught by the parallel network of Goddard, cited in Aggarwal. Aggarwal teaches that Goddard did not directly apply HMM in human movement recognition, but instead used a structure type called a scenario, which assembles scenarios into composite scenarios. Aggarwal teaches that within this structure type, learning is done by training a parallel network mapped by a feature hierarchy. Therefore, the parallel network merely replaces the HMM structure, previously mentioned by other sources cited in Aggarwal, and is taught as a different method in obtaining an estimation of model parameters. The parallel network is not an activity model dictionary simply because it is mapped with a feature hierarchy, but merely teaches an alternative model to enhance motion estimation. Thus, Aggarwal does not teach or suggest the feature of a an activity model dictionary, as required by claim 9, nor does it teach or suggest maximizing the probability between activity models and a video frame provided from a given activity model dictionary. Therefore, Aggarwal does not correct the deficiencies of Pavlovic.

Applicant submits that Pavlovic, alone or in combination with Aggarwal, does not suggest the features discussed above and, thus, claim 9 is patentable for at least the reasons presented above.

B. Claim 10

Since claim 10 depends upon claim 9, Applicant submits that claim 10 is patentable at least by virtue of its dependency.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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